



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/024,787 | 12/20/2001 | Michael Epstein | US 010674 | 4350 |
| 24737 | 7590 | 03/23/2005 | EXAMINER | |
| PHILIPS INTELLECTUAL PROPERTY & STANDARDS P.O. BOX 3001 BRIARCLIFF MANOR, NY 10510 | | | HUNG, YUBIN | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2625 | |

DATE MAILED: 03/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-----------------|------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/024,787 | EPSTEIN, MICHAEL | |
| | Examiner | Art Unit | |
| | Yubin Hung | 2625 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-12 and 14-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-19 is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-12, 14-16, 20-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12/20/01 & 5/21/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
 - P. 5, line 1: application number and application date are missing
 - P. 9, line 1: the second 411 should have been 412, per line 4 of the same page

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 14-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

4. Claims 14-16 each recites the limitation "claim 13" in their respective line 1. There is insufficient antecedent basis for this limitation in the claim. **[Note: For examination purpose "claim 13" will be interpreted as "claim 12."]**

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3, 7-12, 14-16, 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Foote et al. (PUB No. US 2002/0172395) and Tan (US 6,490,353).

7. Regarding claim 1, Foote discloses

- a watermark encoder that is configured to apply a watermark to each of a plurality of segments of content material to form a plurality of watermarked segments
[Fig. 5 (watermark encoder); Figs. 1, 3; paragraphs [0050], [0051], [0081], [0082], [0090]-[0094]]
- apply a watermark to each of the plurality of segments so that at least two watermarked segments of the plurality of watermarked segments have different watermark sizes
[Fig. 1, refs. 22, 24 (two watermarked segments with different watermark sizes)]

Foote does not expressly disclose a size generator that is configured to control a size of the watermark that is applied to each of the plurality of segments, based on a random process.

However, Tan disclose a random process that generates blocks of different lengths [Fig. 1; Col. 9, lines 56-64]. In addition, it is well known in the art to have the size of

Art Unit: 2625

watermarks depend on the sizes of the segments they are to be embedded [as admitted in P. 6, lines 25-26 of the application].

Foote and Tan are combinable because they have aspects that are from the same field of endeavor of data security/integrity.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify Foote with the teaching of Tan by using a random process to generate the sizes of the watermarks to be embedded to data blocks that are to be protected. The motivation would have been because various length segment (note that in Foote the sizes of the watermarks to be embedded determines the sizes of their corresponding watermarked segments) increases the level of difficulty for a successful attack, as Tan points out in column 3, lines 11-16.

Therefore, it would have been obvious to combine Tan with Foote to obtain the invention specified in Claim 1.

8. Regarding claim 2, and similarly claims 11 and 12, the combined invention of Foote and Tan further discloses

- (claims 2 and 11) a segmenter, operably coupled to the size generator and the watermark encoder, that is configured to control a size of each segment of the plurality of segments, based on an output of the size generator, wherein the size of the watermark that is applied to each of the plurality of segments is based on the size of each segment of the plurality of segments

Art Unit: 2625

[Tan: Fig. 1 (blocks labeled "Generate a random data block length" & "Copy data from message into buffer") and Col. 9, lines 56-64. In addition, per the analysis of claim 1, it is well known in the art to have the size of watermarks depend on the sizes of the segments they are to be embedded]

- (claim 12) watermark encoder that is configured to apply a watermark to each of the plurality of segments of content material to form a plurality of watermarked segments
[Foote: Fig. 1. Note that watermarks are applied to the segments, regardless whether they have been compressed or expanded or not]

9. Regarding claim 3, the combined invention of Foote and Tan further discloses

- the size generator controls the size of each segment
[Per the analysis of claim 2]

10. Regarding claims 7 and 8, and similarly claims 14 and 15, the combined invention of Foote and Tan further discloses

- (clams 7 & 14) the random process is initialized by a seed value that is based on one or more data items in the content material
[Tan: Col. 4, line 62-Col. 5, line 21. Note that the seed include information such as sub-key start positions that's part of the content information (to be transmitted along with the encoded message)]
- (claims 8 & 15) the random process is initialized by a seed value, and the watermarking system is further configured to include the seed value in at least one of the plurality of watermarked segments
[Tan: Fig. 1]

11. Regarding claims 9, 10 and 16, Foote further discloses

- (claim 9) the size generator is further configured to control a variance of the sizes of the plurality of segments
[Per well-known techniques in the art admitted in P. 7, lines 8-10 of the application, it is clear that the variance of the resultant segment sizes is controlled]
- (claims 10 & 16) the size generator is further configured to control the size of the watermark based on one or more sizes of other segments of the plurality of segments
[Foote: Fig. 1; P. 4, paragraph 0060, lines 1-6. Since the total size of the variable-sized segments in the watermarked data set is the same as that of the reference data set, the size of the watermark has to be based on one or more sizes of other segments of the plurality of segments for that to be possible]

Art Unit: 2625

12. Claims 20-25 are rejected because it is well known in the art that a media such as a CD-ROM can be used to transfer watermarked content material.

13. Regarding claim 26, the combined invention of Foote and Tan further discloses

- a size determinator that is configured to determine a size of one or more segments of a plurality of segments that form a data set
[Tan: Fig. 1 (blocks labeled "Generate a random data block length" & "Copy data from message into buffer") and Col. 9, lines 56-64]
- a comparator that is configured to compare the size of the one or more segments of the plurality of segments to a specified size corresponding to the one or more segments of the plurality of segments
[Foote: P. 4, paragraph 0060, lines 1-6. Since the total size of the variable-sized segments in the watermarked data set is the same as that of the reference data set, the size comparison is obviously implied]

14. Regarding claim 27, the combined invention of Foote and Tan further discloses

- including a pseudo-random generator that is configured to determine the specified size corresponding to the one or more segments of the plurality of segments, based on a seed value that is associated with the data set
[Per the analysis of claim 4 (re seed value) and Col. 9, lines 59-62 for the teaching/suggestion of the use of a pseudo-random generator (note that it is well known that random numbers are usually generated using a pseudo-random number generator)]

Allowable Subject Matter

15. Claims 17-19 are allowed.

16. The following is a statement of reasons for the indication of allowable subject matter:

Art Unit: 2625

17. Regarding claim 17 and its dependent claims 18 and 19, the prior art of record fails to teach or suggest, alone or in combination, a security system comprising, along with other limitations

- an authorization device, operably coupled to the watermark detector, that is configured to determine an authorization of the watermarked segment, based on the information item and based on the size of the information item

Closest art of record such as Arcot et al. (EP 0644474A1) discloses a method that utilizes medium non-uniformities to minimize unauthorized duplication of digital information. However, it does not use the size of the information item for such a purpose.

Conclusion and Contact Information

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.:

- Saliahov (EP 1195761A2) – discloses an optical disc authentication method that uses the measured quantities of disc segments to provide a disc finger print to determine whether a disc is an illegal copy or not
- Cooper et al. (Pub No.: US 2001/0051996) – discloses a system and method for monitoring the movement of watermarked files

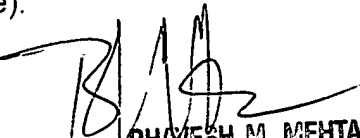
Art Unit: 2625

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yubin Hung whose telephone number is (703) 305-1896. The examiner can normally be reached on 7:30 - 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bhavesh Mehta can be reached on (703) 308-5246. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Yubin Hung
Patent Examiner
March 21, 2005


BHAVESH M. MEHTA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800